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# 1. ELECTROPHORESIS DEVICE, ELECTRON RELEASING ELEMENT AND IMAGE DISPLAY DEVICE PRODUCED BY UTILIZING THE SAME AS WELL AS THEIR PRODUCTION

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APPLICANT(S)- MATSUSHITA ELECTRIC IND CO LTD

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PROBLEM TO BE SOLVED: To easily gather particulates at an arbitrary point and to produce a release element provided with a cold cathode member with good productivity by forming a projecting part on either one surface of parallel flat plate electrodes which are formed by sandwiching a suspension containing the particulates between a pair of the parallel flat plate electrodes facing each other and move the particulates by impressing an electric field thereto.

SOLUTION: The flat plate electrode 103 provided with the projecting part 102 and a glass substrate 105 having an Al electrode 104 are arranged in parallel within an electrophoresis vessel 101. The suspension 107 nearly uniformly dispersed with carbon nanotubes 106 is injected into the vessel and voltage is impressed between the flat plate electrode 103 and the Al electrode 104 by a DC power source 108. The carbon nanotubes 106 tightly gathered to a spherical form on the Al electrode 104 facing the projecting part 102 and adhere to the glass substrate 105. When a light emission device is constituted 4 the glass substrate 105 as a cathode and an anode consisting of a phosphor thin film, the carbon nanotubes function as a cold cathode member and the phosphor thin films emit light to a planar form. The particulates may be gathered and fixed by the fewer stages.

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